HEATING, VENTILATION AND AIR CONDITIONING'S FEBRUARY 5, 2008 BOARD PACKET

Division of Building Safety

HVAC Board

Fiscal Year 2008. For the month ending December 31, 2007

	Budget	Expenditures	Remaining	% Used
PERSONNEL COSTS	1,084,800.00	587,218.69	497,581.31	54.1
OPERATING EXPENSES	943,137.00	191,607.32	751,529.68	20.3
Total	**2,027,937.00**	**778,826.01**	**1,249,110.99**	**38.4**

Cash Report

Beginning	Receipts	Transfers	Expenditures	Balance
754,394.57	830,982.94	152,501.64	845,220.25	892,658.90

Revenue / Expenditures

Fiscal Year 2008, As of Month Ending Dec

HVAC- 0229-08

OBJECT	TITLE	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
		754,394.57	785,035.96	915,033.83	900,607.80	930,908.75	889,148.32	-	-	-	-	-	-	754,394.57
BEG CASH BALANCE		**754,394.57**	**785,035.96**	**915,033.83**	**900,607.80**	**930,908.75**	**889,148.32**	**-**	**-**	**-**	**-**	**-**	**-**	**754,394.57**
2105	P CARD LIABILITY	5,158.20	(4,559.55)	2,922.49	2,239.37	(1,300.92)	(558.83)	-	-	-	-	-	-	3,900.76
4700	OPERATING TRANSFERS IN	-	152,501.64	-	-	-	-	-	-	-	-	-	-	152,501.64
TOTAL BALANCE SHEET		**5,158.20**	**147,942.09**	**2,922.49**	**2,239.37**	**(1,300.92)**	**(558.83)**	**-**	**-**	**-**	**-**	**-**	**-**	**156,402.40**
1020	REGULATORY LICENSE	18,726.00	17,887.42	20,922.00	19,019.60	14,915.84	11,175.00	-	-	-	-	-	-	102,645.86
1090	INSPECTION FEES	118,758.13	137,455.79	106,826.47	144,718.49	104,359.86	106,197.04	-	-	-	-	-	-	718,315.78
1155	FILING FEES	672.50	1,050.00	1,085.00	525.00	490.00	840.00	-	-	-	-	-	-	4,662.50
1315	FINES	-	900.00	200.00	1,100.00	300.00	300.00	-	-	-	-	-	-	2,800.00
1545	TECHNICAL SERVICES	-	-	-	-	250.00	-	-	-	-	-	-	-	250.00
2715	RENT	-	-	-	-	2,276.83	-	-	-	-	-	-	-	2,276.83
3635	REFUND/REIMB PY EXP	11.97	-	-	-	-	-	-	-	-	-	-	-	11.97
3690	OTHER	-	20.00	-	-	-	-	-	-	-	-	-	-	20.00
TOTAL REVENUE		**138,168.60**	**157,313.21**	**129,033.47**	**165,363.09**	**122,592.53**	**118,512.04**	**-**	**-**	**-**	**-**	**-**	**-**	**830,982.94**
4101	GROSS SALARY & WAGE	59,064.71	66,211.14	67,518.51	67,592.40	96,550.44	64,125.79	-	-	-	-	-	-	421,062.99
4201	EMPLOYEE BENEFITS	24,547.73	27,424.58	27,602.59	27,563.42	32,845.44	26,171.94	-	-	-	-	-	-	166,155.70
TOTAL PERSONNEL COSTS		**83,612.44**	**93,635.72**	**95,121.10**	**95,155.82**	**129,395.88**	**90,297.73**	**-**	**-**	**-**	**-**	**-**	**-**	**587,218.69**
6000	CAPITAL OUTLAY	-	36,192.00	3,250.00	19,866.00	10,987.00	-	-	-	-	-	-	-	70,295.00
TOTAL PY ENCUMBRANCE		**-**	**36,192.00**	**3,250.00**	**19,866.00**	**10,987.00**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**70,295.00**
5001	COMMUNICATION COSTS	2,444.52	6,513.24	2,183.37	4,069.92	4,380.74	3,446.26	-	-	-	-	-	-	23,038.05
5051	EMPLOYEE DEVELOPMENT COSTS	(12.50)	581.17	813.75	488.60	322.45	721.69	-	-	-	-	-	-	2,915.16
5101	GENERAL SERVICES	1,451.89	8,468.11	2,765.24	1,463.57	2,430.51	2,492.44	-	-	-	-	-	-	19,071.76
5151	PROFESSIONAL SERVICES	8,208.00	2,126.50	210.00	304.75	51.75	-	-	-	-	-	-	-	10,901.00
5201	REPAIR & MAINT SVCS	5,515.39	1,882.77	976.88	1,727.10	3,273.40	2,907.12	-	-	-	-	-	-	16,282.66
5251	ADMINSTRATIVE SERVICES	105.36	-	0.46	0.89	-	448.78	-	-	-	-	-	-	555.49
5301	COMPUTER SERVICES	-	353.91	135.04	0.93	44.51	131.74	-	-	-	-	-	-	666.13
5351	EMPLOYEE TRAVEL COSTS	1,479.67	4,108.51	(565.34)	1,502.38	252.91	136.67	-	-	-	-	-	-	6,914.80

Division of Building Safety

Revenue / Expenditures

Fiscal Year 2008, As of Month Ending Dec

OBJECT	TITLE	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
5401	ADMINISTRATIVE SUPPLIES	2,531.31	1,454.36	1,493.22	1,433.54	5,006.59	920.16	-	-	-	-	-	-	12,839.18
5451	FUEL & LUBRICANTS COSTS	5,102.12	4,895.84	5,084.77	3,978.50	5,533.99	5,192.27	-	-	-	-	-	-	29,787.49
5551	COMPUTER SUPPLIES	708.28	(1,077.22)	33,037.55	938.88	1,544.71	1,115.33	-	-	-	-	-	-	36,267.53
5601	REPAIR & MAINT SUPPLIES	4.99	-	588.55	1,504.93	(1,626.39)	12.18	-	-	-	-	-	-	484.26
5701	SPECIFIC USE SUPPLIES	79.80	214.46	442.28	72.98	478.51	1,924.20	-	-	-	-	-	-	3,212.23
5751	INSURANCE	-	-	-	3,241.56	-	-	-	-	-	-	-	-	3,241.56
5901	RENTALS & OPER LEASES	1,454.14	437.77	45.12	1,551.16	51.78	2,813.22	-	-	-	-	-	-	6,353.19
5961	MISC EXPENDITURES	-	15,470.29	800.00	-	923.70	1,882.84	-	-	-	-	-	-	19,076.83
TOTAL OPERATING COSTS		**29,072.97**	**45,429.71**	**48,010.89**	**22,279.69**	**22,669.16**	**24,144.90**	**-**	**-**	**-**	**-**	**-**	**-**	**191,607.32**
		112,685.41	175,257.43	146,381.99	137,301.51	163,052.04	114,442.63	-	-	-	-	-	-	849,121.01
TOTAL EXPENDITURES		**112,685.41**	**175,257.43**	**146,381.99**	**137,301.51**	**163,052.04**	**114,442.63**	**-**	**-**	**-**	**-**	**-**	**-**	**849,121.01**
		785,035.96	915,033.83	900,607.80	930,908.75	889,148.32	892,658.90	-	-	-	-	-	-	892,658.90
END CASH BALANCE		**785,035.96**	**915,033.83**	**900,607.80**	**930,908.75**	**889,148.32**	**892,658.90**	**-**	**-**	**-**	**-**	**-**	**-**	**892,658.90**

1/15/08

I.C.C.
HVAC EXAM SUMMARY

T= TOTAL TESTED

P = TOTAL PASSED

% = PERCENT PASSED

MONTH	CONTRACTOR			JOURNEYMAN			HEARTH SPEC. CONTRACTOR			HEARTH SPEC. JOURNEYMAN			TOT TSTD	TOT PASS	% PASS
	T	P	%	T	P	%	T	P	%	T	P	%			
JAN 07	7	6	86%	21	15	71%							28	21	75%
FEB 07	4	3	75%	8	6	75%							12	9	75%
MAR 07	6	6	100%	13	9	69%							19	15	79%
APR 07	6	6	100%	15	7	47%							21	13	62%
MAY 07	12	11	91%	18	9	50%							30	20	66%
JUN 07	7	5	71%	14	9	64%							21	14	66%
JUL 07	6	6	100%	18	9	50%							24	15	63%
AUG 07	7	6	86%	17	13	77%							24	19	79%
SEPT 07	4	3	75%	11	6	55%				4	2	50%	19	11	58%
OCT 07	13	10	77%	17	12	71%							30	22	73%
NOV 07	4	4	100%	12	7	58%							16	11	69%
DEC 07	2	2	100%	5	3	60%							7	5	71%
Total	78	68	87%	169	105	62%				4	2	50%	251	175	70%

1/15/2008

HVAC JOURNEYMAN FIRST EXAM ATTEMPTS

2007

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TTL	%
BSU	**T**													0	
	P													0	
LCSC	**T**								1					1	100%
	P								1					1	
CSI	**T**													0	
	P													0	
EITC	**T**										1	1		2	100%
	P										1	1		2	
ISU	**T**													0	
	P													0	
JATC	**T**							1					1	2	0%
	P							0					0	0	
NIC	**T**													0	
	P													0	
OOS/PRE'04	**T**	15	7	13	14	14	8	14	8	8	10	8	4	123	59%
	P	10	5	9	6	7	4	6	5	6	8	5	3	72	
TOTAL	**T**	15	7	13	14	14	8	15	9	8	11	9	5	128	59%
	P	10	5	9	6	7	4	6	6	6	9	6	3	75	
%		67%	71%	69%	43%	50%	50%	40%	67%	75%	82%	67%	60%	59%	

COPY

NOV 2 9 2007

Dear HVAC, DBS.
RE: [redacted] Heating and Cooling.

I am a regular customer of [redacted], and had a technician by the name of randy at my home. After talking to randy and getting more aquanted with his decision of him choosing HVAC, he informed me that he was only an apprentice. I asked him what his job description was specifically, and he told me that he always works by himself. He does Service calls, is on the, on-call rotation with [redacted], and performs install's by himself. I am in the plumbing and electrical trade, and licensed as a journeyman for both. From what I learned is, to be working by yourself, you must be a journeyman. This [redacted] technician, never has a journeyman with him.
After learning about the illegal practices of [redacted] I wont do business with them anymore.
Now, I am leaving the rest up to you,[DBS]
My name will be anonymous. But this information will be very helpful to you.

Sincerely,
Your great helping citizen.

LEGEND TO THE NOTICE OF VIOLATIONS FOR HVAC

Code	Brief Description
HVC.01	Unlicensed Contractor or Specialty Contractor
HVC.02	Knowingly Employing Unlicensed Person
HVC.03	Unlicensed Journeyman, Apprentice, Specialty or Specialty Apprentice
HVC.04	Failure to Supervise
HVC.05	Performance Outside Scope of License
HVC.06	Failure to Permit and/or Pay Applicable Fees
HVC.07	Failure to Correct
HVC.08	Gross Violations

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Dedicated to helping people who are serious about promoting employee, customer, and public safety.

Idaho HVAC LP-Gas Limited License: Report and Recommendations for Demonstrating Competency of Applicants

In Response to: **Rocky Mountain Propane Association Request for a Needs Analysis and Education Program Curriculum Guide**

Submitted to: Baron Glassgow, RMPA Executive Director

Date Submitted: January 2, 2008

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Executive Summary

The State of Idaho, in similar fashion to the actions of other state governments in recent years, has enacted legislation establishing a Heating Ventilation and Air Condition (HVAC) Board to adopt codes applicable to HVAC operations, and charged the HVAC Board with the task of setting categories of HVAC personnel certification and the competency requirements for those certifications. As in other states, the establishment of an HVAC Board in Idaho has cast a light on the diversity of industries and trades who have historically provided HVAC and HVAC-related services in the course of their businesses. One obvious example is the propane marketer who has historically installed gas piping, gas appliances, and necessary components of a gas appliance system (including venting) as an adjunct to supplying fuel for the consumer's comfort and health.

Additionally, many propane marketers have also acted as a "qualified agency[1]" to establish and/or reinstate gas service to new and existing consumers, and when called upon, have provided gas appliance system checks and made essential repairs based on the application of National Fire Protection Association fuel gas codes and industry standards. As such, they have played a vital role in protecting consumer health and safety.

With the adoption of IDAPA 07.07.01, "Rules Governing Installation of Heating, Ventilation, and Air Conditioning Systems, Division of Building Safety" (HVAC Rules), and the subsequent adoption of the International Fuel Gas Code and the International Mechanical Code, the need for additional propane industry personnel training prior to performing HVAC-related work in the normal course of business has become apparent to propane marketers seeking to comply with the Idaho HVAC Rules. The Minutes of regular meetings of the Idaho HVAC Board (the Board) as early as June 27, 2006, reflect the desire of the propane industry to comply with the HVAC Rules by means of an "specialty license for propane", resulting in a motion by the Board "to approve the concept of the Propane industry bringing a proposal to this Board regarding education and specialty licensing for Propane."

At later Idaho HVAC Board meetings additional discussion of the subject has led to a consensus identifying the nature of a "Fuel Gas Specialty License" and the activities that would be permitted under such a specialty license. As this report and recommendations were prepared, the Board and further action on an LP-gas specialty license is awaiting the introduction of a proposed training curriculum to support the certification of persons seeking the specialty license.

[1] "Qualified agency" as used in NFPA 54, *National Fuel Gas Code* (ANSI Z223.1)

Defining a LP-Gas Specialty Education Curriculum

To proceed with developing an education program to verify applicant competency for a LP-Gas specialty license and a curriculum design for the program, it is first necessary to identify the tasks to be performed by propane industry personnel under the proposed LP-Gas Specialty License.

To date, the primary tasks identified are:

- Installing LP-Gas piping
- Installing LP-gas appliances

In order to properly perform those primary tasks, subsidiary enabling tasks or operations must also be identified, such as, but not limited to the following:

- Identifying Idaho HVAC Board Rules and Procedures
- Identifying the International Code Council codes the Idaho HVAC Board adopted and incorporated by reference
- Identifying the additions and/or modifications to those codes adopted by the Idaho HVAC Board
- Applying the International Fuel Gas Code to assure adequate gas piping sizing and proper installation practices
- Applying the International Fuel Gas Code to assure installed appliances are supplied adequate combustion air, and are properly vented
- Applying the International Mechanical Code to assure installed appliances meet specific gas utilization equipment (appliance) installation requirements
- Recognizing prohibited gas piping installation practices
- Recognizing prohibited gas appliance installation practices
- Recognizing unsafe gas appliance installation operating conditions

Recommendations for An LP-Gas Specialty Education Curriculum

1.0 Identifying the Rules Governing Installation of HVAC Systems in Idaho **1 hour**

- 1.1 Review of the Rules and Procedures of the Division of Building Safety HVAC Board
  - 1.1.1 Gaining a Working Knowledge of the Legal Authority for and Scope of the HVAC Board Responsibilities
  - 1.1.2 Identifying HVAC Board Contact Information
- 1.2 Identifying the Types of Certifications and Licenses Issued by the HVAC Board
  - 1.2.1 Identifying the types of HVAC work permitted by the LP-Gas Specialty License
  - 1.2.2 Identifying the application and competency requirements for the LP-Gas Specialty License
- 1.3 Identifying the Rules Governing Permits and Inspections
  - 1.3.1 Determining When a HVAC Permit is Required and How to Obtain the Permit
  - 1.3.2 Determining When an Inspection is Required and How to Obtain the Inspection

2.0 Identifying the Codes Applicable to HVAC Operations in Idaho **1.5 hours**

- 2.1 Examining the International Fuel Gas Code (IFGC)
  - 2.1.1 Identifying Idaho HVAC Board Additions or Modifications to the IFGC, 2003, Edition As Adopted and Incorporated by Reference
  - 2.1.2 Using the IFGC (2003) Table of Contents and Index
  - 2.1.3 Identifying General Provisions of the IFGC (2003)
  - 2.1.4 Locating Code Requirements for Gas Piping and Gas System Installation in the IFGC (2003)
  - 2.1.5 Identifying the Subjects Addressed by the Appendixes to IFGC (2003)
  - 2.1.6 Identifying the Relationship of the IFGC to NFPA 54
- 2.2 Examining the International Mechanical Code (IMC)
  - 2.2.1 Identifying Idaho HVAC Board Additions or Modifications to the IMC, 2003, Edition As Adopted and Incorporated by Reference

2.2.2 Using the IMC (2003) Table of Contents and Index

2.2.3 Identifying General Provisions of the IMC (2003)

2.2.4 Locating Code Requirements for Gas Appliance Installations in the IMC (2003)

2.2.5 Identifying the Subjects Addressed by the Appendix A to IMC (2003)

2.3 Examining the Parts V (Mechanical) and VI (Fuel Gas) of the International Residential Code (IRC) for One and Two-family Dwellings, 2003 Edition

2.3.1 Identifying Idaho HVAC Board Additions or Modifications to the IRC, 2003, Edition As Adopted and Incorporated by Reference

3.0 Identifying Fundamental LP-Gas Properties and Units of Measure for Determining the Adequacy of Pipe and Vent Sizing **1.5 hours**

3.1 Identifying the Physical Properties of LP-Gas

3.1.1 Converting LP-Gas Heating Values from British thermal units (Btus) to Cubic Feet per Hour

3.1.2 Identifying How the Specific Gravity of LP-Gas Vapor Relates to IFGC Pipe and Tubing Sizing Tables

3.3 Identifying the Combustion Properties of Fuel Gases

4.0 Identifying Mathematical Symbols, Terms and Formulas Used in Gas Pipe Sizing and Combustion Air Calculations **2.5 hours**

4.1 Identifying the Formulas Used in Pipe Sizing Calculations

4.1.1 Identifying the Mathematical Symbols in Pipe Sizing Calculations

4.1.2 Identifying the Terms (Constants and Variables) in Pipe Sizing Calculations

4.2 Identifying the Formulas Used in Combustion Air Calculations

4.2.1 Identifying the Mathematical Symbols in Combustion Air Calculations

4.2.2 Identifying the Terms (Constants and Variables) in Combustion Air Calculations

4.3 Identifying Other Mathematical Calculations Used in Gas Piping Installation

Instructional Day 1 7.5 hours Cumulative 7.5 hours

5.0 Identifying the Functions and Characteristics of Construction Drawings and Specifications **3 hours**

- 5.1 Introduction to Architectural and Construction Drawings
  - 5.1.1 Determining Building Component Location from Scale Drawings
  - 5.1.2 Using Scale Drawings to Determine Building Dimensions and Lengths of Piping or Venting Runs
  - 5.1.3 Identifying Symbols Commonly Used on Construction Drawings
- 5.2 Identifying Construction Drawing Types
  - 5.2.1 Elevation Drawings and Their Uses in Gas System Design
  - 5.2.2 Floor Plans and Their Uses in Gas System Design
  - 5.2.3 Interpreting and/or Making Isometric Drawings
- 5.3 Identifying Construction Schedules and Specifications
  - 5.3.1 Reading Construction Schedules
  - 5.3.2 Using Construction Schedules in Determining Bills of Materials and Specifications

6.0 Determining Gas System Load and Customer Profile **12 hours**

- 6.1 Determining the Customer Gas Appliance Use Profile
  - 6.1.1 Using a Gas Appliance System Customer Use Profile
  - 6.1.2 Identifying Methods for Estimating Air Changes per Hour
  - 6.1.3 Using Calculations to determine heat gain / loss
- 6.2 Identifying Possible Gas Appliance System Design Problems

Instructional Days 2 & 3 **15 hours** **Cumulative 22.5 hours**

7.0 Properly Sizing Heating Appliances Relative to the Space to Be Heated **4.5 hours**

- 7.1 Identifying Factors that Affect Space Heat Loss and Transfer
- 7.2 Determining the Heating Output of a Given Heating Appliance

8.0 Identifying Gas Appliance Categories and Rating Information **3 hours**

- 8.1 Identifying the Location of Manufacturer's Gas Appliance Input Rating, Output Rating and Operating Altitude Design
- 8.2 Identifying Gas Appliance Types According to Their Venting Systems
  - 8.2.1 Code Definitions of Venting Systems
  - 8.2.2 Category I Vented Appliances
  - 8.2.3 Category II Vented Appliances
  - 8.2.4 Category III Vented Appliances
  - 8.2.5 Category IV Vented Appliances
- 8.3 Identifying Gas Appliance Types According to the Fuel Gas Utilized

Instructional Day 4 **7.5 hours** **Cumulative 30 hours**

9.0 Identifying Code Requirements for the Installation of Unvented Appliances **1.5 hours**

- 9.1 Code Limitations on the Installation of Unvented Gas Appliances and Prohibited Installations
- 9.2 Code Installation Clearance Requirements
  - 8.2.1 Clearance for Service Access
  - 8.2.2 Clearance from Combustibles

10.0 Fundamentals of LP-Gas Piping **1.5 hours**

- 10.1 Code Approved Piping Materials For Fuel Gases
  - 10.1.1 Steel Pipe Specifications
  - 10.1.2 Copper Tubing Specifications
  - 10.1.3 Aluminum Tubing Specifications
  - 10.1.4 Corrugated Stainless Steel Tubing Specifications
- 10.2 Gas System Pressure Requirements
  - 10.2.1 Pounds to Inches Water Column Systems
  - 10.2.2 Inches Water Column Systems
- 10.3 Gas System Volume Flow Requirements—Determining System Demand

11.0 Sizing and Installing Corrugated Stainless Steel Tubing 5.5 hours

- 11.1 Sizing CSST Using the Longest Length Method
- 11.2 Sizing CSST Using the Branch Length Method
- 11.3 Sizing CSST the Hybrid Pressure Method
- 11.4 Corrugated Stainless Steel Tubing System Requirements
  - 11.4.1 Joining Methods for CSST
  - 11.4.2 Protection Requirements for CSST
  - 11.4.3 Requirements for Copper Tubing Penetration of Building Structural Components & Prohibited Locations

12.0 Sizing and Installing Copper Tubing 2 hours

- 12.1 Sizing Copper Tubing Using the Longest Length Method
- 12.2 Sizing Copper Tubing Using the Branch Length Method
- 12.3 Sizing Copper Tubing the Hybrid Pressure Method
- 12.4 Using the Low-Pressure Gas Equation to Size Copper Tubing
- 12.5 Using the High-Pressure Gas Equation to Size Copper Tubing
- 12.5 Copper Tubing System Requirements
  - 12.5.1 Copper Tubing Joining Methods
  - 12.5.2 Protection Requirements for Copper Tubing
  - 12.5.3 Requirements for Copper Tubing Penetration of Building Structural Components & Prohibited Locations

13.0 Sizing and Installing Steel Piping 4.5 hours

- 13.1 Sizing Steel Piping Using the Longest Length Method
- 13.2 Sizing Steel Piping Using the Branch Length Method
- 13.3 Sizing Steel Piping Using the Hybrid Pressure Method
- 13.4 Using the Low-Pressure Gas Equation to Size Steel Piping
- 13.5 Using the High-Pressure Gs Equation to Size Steel Piping
- 13.6 Steel Piping System Requirements
  - 13.6.1 Steel Piping Support Requirements
  - 13.6.2 Pipe Joining Methods
  - 13.6.3 Prohibited Piping Locations & Practices
  - 13.64 Requirements for Pipe Penetration of Building Structural Components

9.5 Electrical Bonding Requirements for Piping Systems

Instructional Days 5 & 6 15 hours Cumulative 45 hours

14.0 Pressure Testing Newly Installed Piping 1.75 hours

14.1 Identifying Code Requirements for Pressure Measuring Gauges Using to Pressure Test Piping
14.2 Applying Piping Pressure Testing Procedures
14.3 Methods for Identifying Leaks in Piping
14.4 Requirements for Repairing Leaks

15.0 Leak Checking Existing Piping Following After an Interruption of Service 1.75 hours

15.1 Identifying Code Requirements for Placing Gas Systems Back Into Service
15.2 Purging Air and Gas Air Mixtures from Piping
15.3 Applying Methods to Verify Piping Is Free of Leaks

16.0 Verifying Appliances Can Properly Utilize LP-Gas 9.5 hours

16.1 Verifying the Appliance Is Correctly Set Up for LP-Gas
16.2 Methods for Converting Appliances from Natural Gas to LP-Gas and Back
16.3 Making Burner Input Adjustments for High-Altitude Installations
16.4 Recognizing Abnormal Burner Operation
16.5 Correcting Abnormal Burner Operating Conditions

17.0 Identifying Gas System Modifications That Require Piping or Other System Changes 3 hours

17.1 Identifying the Effects of Adding One or More Gas Appliances to an Existing Gas Piping System
17.2 Examining the Effects of Adding Higher Btu/hr Input Appliances to Existing Venting Systems
17.3 Examining the Effects of Adding Higher Btu/hr Input Appliances on Combustion Air Requirements

18.0 Verifying Adequate Combustion Air Is Provided 4.5 hours

- 18.1 Applying the Standard Method to Determine Required Air Volume
- 18.2 Applying the Known Air Infiltration Rate Method

19.0 Identifying Methods for Providing Combustion Air 2 hour

- 19.1 Combining Spaces on the Same or Different Stories
- 19.2 Outdoor Combustion Air: One Permanent Opening and Two Permanent Openings Methods
- 19.3 Combination Indoor and Outdoor Combustion Air
- 19.4 Requirements for Engineered Systems
- 19.5 Mechanical Combustion Air Supply
- 19.6 Air Flow Through Louvers and Grilles

Instructional Days 7- 9 22.5 hours Cumulative 67.5 hours

20.0 Specific Gas Appliance Installation Requirements 7.5 hours

- 20.1 Hazardous Area Installations
- 20.2 Elevation of Ignition Source
- 20.3 Installations in Public Garages
- 20.4 Installations in Private Garages
- 20.5 Clearances from Grade and To Combustibles
- 20.6 Installations in Attics
- 20.7 Under Floor Installations
- 20.8 Installations on Roofs or Elevated Structures
- 20.9 Installations in Spaces Where Exhaust Fans or Air Exhaust Appliances Are Located
- 20.10 Manufacturer Installation Instructions

Instructional Day 10 7.5 hours Cumulative 75 hours

21.0 Identifying the Properties of Gas Appliance Electrical Circuits **7.5 hours**

- 21.1 Using Meters to Safely Measure Electrical Quantities
- 21.2 Measuring Voltage in an Electrical Circuit
- 21.3 Measuring Resistance in an Electrical Circuit
- 21.4 Measuring Current Flow in an Electrical Circuit
- 21.5 Clearances from Grade and To Combustibles

Instructional Day 11 **7.5 hours** **Cumulative 82.5 hours**

22.0 Isolating Potential Causes of Appliance Failures **7.5 hours**

- 22.1 Identifying Operating Characteristics of Common Sensing Devices
- 22.2 Identifying the Components and Operating Characteristics of Electronic Ignition Systems
- 22.3 Identifying the Components and Operating Characteristics of Wall Thermostats
- 22.4 Identifying the Components and Operating Characteristics of Limit and Fan Controls
- 22.5 Identifying the Function and Characteristics of Draft Fans & Controls

Instructional Day 12 **7.5 hours** **Cumulative 90 hours**

23.0 Reading Electrical Control Circuit Diagrams **7.5 hours**

- 23.1 Reading Ladder Diagrams
- 23.2 Reading Component Diagrams
- 23.3 Using Other Types of Appliance Diagrams
- 23.4 Using Diagrams to Troubleshoot Appliance Failures

Instructional Day 13 **7.5 hours** **Cumulative 97.5 hours**

24.0 Identifying Appliance Venting Requirements **15 hours**

- 24.1 Identifying Approved Vent Installation Techniques
- 24.2 Identifying Metallic Venting System Design Characteristics
- 24.3 Sizing Single Natural Draft or Fan-Assisted Appliance Vent Systems
- 24.4 Sizing Multiple Category I Appliance Venting Systems

Instructional Days 14 & 15 **15 hours** **Cumulative 112.5 hours**

25.0 Applying IFGC Appendix D to Perform a Safety Inspection of an Existing Appliance Installation **7.5 hours**

Instructional Day 16 **15 hours** **Cumulative 120 hours**

JOURNEYMAN & APPRENTICE LICENSE COUNTS
1/16/2008

ELECTRICAL

Journeyman	-	5,726 – Active
Master	-	337 - Active
Apprentice	-	2,472 - Active
Apprentice	-	2 - Suspended – (not in school)

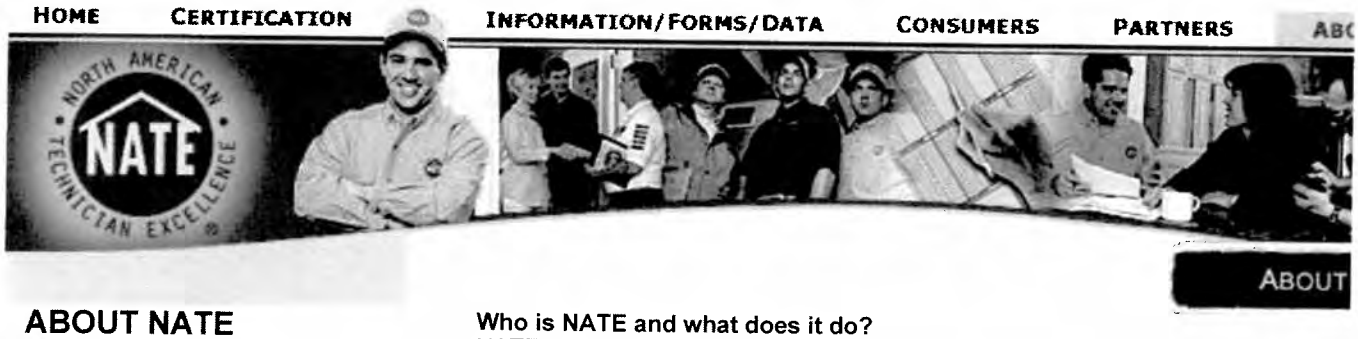
PLUMBING

Journeyman	-	2,198 – Active
Apprentice	-	789 - Active
Apprentice	-	135 - Suspended – (not in school)

HVAC

Journeyman	-	3,861 – Active
Apprentice	-	911 - Active
Apprentice	-	198 - Suspended – (not in school)

NATE NORTH AMERICAN TECHNICIAN EXCELLENCE



ABOUT NATE

Who is NATE and what does it do?
NATE, North American Technician Excellence Inc., is an independent, third-party c body for HVAC/R technicians. NATE tests technicians; others train. Testing valid technician's knowledge and a training program's instruction. NATE-approved testir organizations throughout the U.S. and Canada offer NATE tests. Candidates can installation and/or service certification in five specialty areas: air-conditioning, air d heat pumps, gas heating & oil heating.

Who Supports NATE?
The entire HVAC/R industry supports NATE: manufacturers, utilities, wholesalers, technicians, contractors and trade associations. The NATE coalition includes:

- Air Conditioning Contractors of America (ACCA);
- Air-Conditioning and Refrigeration Institute (ARI);
- American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE);
- Building Performance Institute (BPI);
- Eastern Heating & Cooling Council (EHCC)
- Edison Electric Institute (EEI);
- Electric Power Research Institute (EPRI);
- Gas Appliance Manufacturers Association (GAMA);
- Heating, Airconditioning & Refrigeration Distributors International (HARDI);
- National Energy Management Institute (NEMI, an organization representin Metal Contractors and Sheet Metal Workers);
- Plumbing-Heating-Cooling-Contractors--National Association (PHCC--NA);
- Refrigeration Service Engineers Society (RSES);
- Service Roundtable
- Skills USA
- Tennessee Valley Authority (TVA)
- U.S. Department of Energy (DOE); and
- the U.S. Environmental Protection Agency (EPA).

The D.O.E. endorses NATE. Consumer Reports said, "It's a plus if a technician is certified." EPA tells consumers to ask if a contractor's technicians are NATE-certif the Montgomery GI Bill, the Department of Veteran's Affairs (VA) reimburses veter take the NATE tests. The U.S. Army recognizes NATE certification for promotion p other certification exam enjoys this industry support.

What are the NATE tests like?
NATE exams are multiple-choice, knowledge-based, and test what 80% of technic an 80% chance of encountering once yearly. There are twelve NATE installation e tests: a core and five specialty tests each. Specialties include Air Distribution, Air Conditioning, Heat Pumps, Gas Heating and Oil Heating. Candidates have four ho complete a NATE test session. Future tests cover Energy Efficiency, Hydronics, ar Commercial Air Conditioning & Refrigeration.

How does a technician become certified?
To become certified, a technician must pass both a *Core* and a *Specialty* exam. A score is 70%; 35 of 50 questions on a Core test and 70 of 100 Specialty test quest Certification lasts for five years, after which a technician must re-certify.

What do the Core and Specialty tests cover?
The core test covers basic math, customer relations, and fundamentals of electricit transfer and comfort. The specialty tests cover system components, applied knowl diagnostics, troubleshooting, and service and installation topics.

How can technicians add additional specialties?
Certified technicians can add other certifications by passing additional specialty ex taking the core is not necessary.

Who does best on a NATE test?
Field technicians with at least two years' experience who have completed some ins from an educational institution, trade association, or other training source do best. study and experience are important to preparing for the test.

How challenging is the NATE test?
Very, 66%-68% pass -- but for candidates taking a class or review course, passing 80% -92%. The NATE-ACE test was developed and validated using a survey and input of the entire industry—those who pass can *prove* they know heating and coo are over 27500 NATE certifications which have been issued.

How can technicians prepare for the NATE exam?
Technicians can prepare by studying and reviewing HVAC/R textbooks or taking N recognized preparation courses and training. ACCA, PHCC, and RSES have jointl a NATE training reference. KATEs (Knowledge Areas of Technician Expertise) are for study for each section. Review courses or study sessions through local associa chapters, schools, or trainers help a candidate prepare for the test.

Tips successful test-takers give about the NATE test.
Be prepared! Hit the books! Download and study the Knowledge Areas of Technici Expertise. Take a review or refresher course. Get a good night's sleep. Read ea question carefully. There are no trick questions, just special conditions like a real-li diagnosis of an HVACR problem. If a candidate thinks about a question, usually th answer becomes obvious.

What does the NATE test cost?
Prices vary. Testing Organizations may mark them up to cover expenses. Many b test with training, and charge for both as a package deal. Contact your local testin organization for pricing.

Who can become a testing organization?
All of NATE's coalition partners can give the NATE test. Any organization in the H industry, e.g. a school, a wholesaler/distributor, manufacturer, association, utility, e become a testing organization (TO) by applying and following the guidelines. TO's proctors who have to abide by NATE's proctor guidelines. Materials are available f download at Information/Forms/Data.

Why take a test? Why support NATE?
Technicians taking the test can *prove* they're the best. Those who pass can wear patch, a symbol recognized by the industry and growing numbers of consumers as of technician excellence and place the NATE decal on their truck.

Contractors support the test because certified technicians remain in the industry lo the job right the first time, and are believed to be more productive than non-certifie Only contractors employing NATE-certified technicians can be listed on NATE's *Co Contractor Connection* web page, and can request a free contractor marketing kit v ad slicks etc.

Manufacturers & distributors win with NATE because certification encourages prop installation and service of equipment by knowledgeable technicians, and this mean warranty returns and ultimately, a better bottom line.

Educators and trainers benefit from a uniform standard of knowledge that allows th better prepare the technician workforce of tomorrow.

Utilities support NATE because properly trained and tested technicians are skilled the proper installation and servicing of sophisticated HVAC/R equipment that oper efficiency and saves energy.

NATE assures consumers that a knowledgeable technician will service their home cooling system. 87% of consumers prefer a certified technician to work on their ho system. That's powerful. Independent third party certification has great value and good reputation to those looking for an HVAC/R contractor. NATE's Consumer Co Connection business locator helps consumers identify contractors employing NAT technicians.

What should I know about NATE recertification?
NATE certification lasts five years. Technicians can recertify by testing, by continui education, or by a combination of testing and continuing education. Technicians w recertify using continuing education can download a list of NATE-recognized cours Training and Testing Resources.

Why should I support NATE certification?
Because it makes good business sense to do so. Certification matters – it 's a mat dollars and sense. Certification is about professionalism, pride, and proficiency--a consumer trust because NATE-certified technicians *know* heating and cooling.

4100 North Fairfax Drive #210 Arlington, VA 22203 (877) 420-NATE tollfree (703) 276-7247 phone (703

R J and Irene Tallent

60 Lundberg Pl
Weiser, ID 83672
208 414 3953 *rtallent@ctcweb.net*

August 18, 2007

Joel Hemmingway, Inspector
Plumbing Division of Building Safety
1090 E. Watertower
Meridian, ID 83642

Dear Mr Hemmingway,

Thank you for chatting with me relative to my concerns about the safety of dryer vents at ground level. I still find it difficult to believe that the codes would allow such a dangerous practice. For my edification, would you kindly cite the code and the article of such code that permits such a dangerous practice.

Thank you.

Very Truly Yours,

R J Tallent

R J Tallent

60 Lundberg Pl
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208 414 3953 *rtallent@ctcweb.net*

November 13, 2007

Carl F Lohrengel
Plumbing/HVAC Bureau Chief
1090 E. Watertower Street
Meridian, ID 83642

Subject: Idaho Plumbing Code

Mr Lohrengel,

In early August of this year, I talked with individuals in your staff about some concerns that I had with the Idaho Plumbing code. Apparently the code, as interpreted by your Division, allows dryer vents to be placed in locations where the exhaust hood can be easily obstructed. The code also does not apparently require the ventilation system in the dryer room to be capable of supplying the makeup air needed by the dryer.

Dryers depend, for their operation and safety, upon flow of air through their system. This air transports the water vapor to the exterior atmosphere and limits the maximum temperature in the dryer. If for some reason this flow is reduced, the equipment will not operate properly and if the temperature control system is not functioning properly, temperature in the dryer can reach the self ignition flash point of the clothes and cause a fire. This can and has happened many times. The State can do little to control the reliability of the dryer temperature control systems, but it can, through codes, control the reliability of the dryer vent systems

Thus, it would seem that in the interest of public safety, the Code, or interpretation thereof, should be changed to improve the reliability of the dryer vent systems by requiring dryer vent hoods to be located so that they can not be obstructed and air flow into the dryer room is also not obstructed. Admittedly, this will increase the cost of the dryer installation, but, if properly engineered, the increase in cost can be made small.

In my discussion with your staff on this matter, it was suggested I present these concerns and need for change to the Board at their next meeting in October. Unfortunately, because of a health problem, I was unable to make this presentation and, according to the Doctors, there is a strong probability that I may not be able to do so later. However, at this point time, my health is reasonably good. Accordingly, I would be most appreciative if I could meet with your staff to, hopefully, find a way to present this problem to the Board if I am not able to do so.

Thank you

Very Truly Yours

R J Tallent PE Retired

cc: Mark Larson, State Fire Marshal

R J Tallent
60 Lundberg Pl
Weiser, ID 83672
208 414 3953 rtallent@etcweb.net

Carl F Lohrengel
Plumbing HVAC Bureau Chief
1090 E. Watertower Street
Meridian, ID 83642

December 7, 2007

Subject: Idaho Plumbing Code
Clothes Dryers

Mr Lohrengel,

This will acknowledge receipt of your of letter of 11.26.07 re subject and information presented therein. My analyses clearly indicate that the dryer exhaust ducting and dryer room ventilation system installed in my house and many others in our development which I have been advised is in accordance with Idaho code presents a major fire hazard.

Per your suggestion, I will advise the HVAC Board of my concerns and the need for code and/or interpretation revision.

Thank you for your response.

Very Truly Yours

R J Tallent PE Retired

cc: Mark Larson, State Fire Marshall

STATE OF IDAHO
PLUMBING BUREAU
RECEIVED
DEC 11 2007

Carl Lohrengel

From: Pat Minegar [Pat@a1heating.com]
Sent: Monday, December 17, 2007 3:53 PM
To: Carl Lohrengel
Subject: FW: Dryer vents

Hi Carl,

Did you receive this as well?

-----Original Message-----
From: R J Tallent [mailto:rtallent@ctcweb.net]
Sent: Saturday, December 15, 2007 4:17 PM
To: Pat Minegar
Subject: Dryer vents

December 15, 2007

Members of the HVAC Board

Because of health problems, I will not be able to attend your next Board meeting so am using this letter to call your attention to a major defect in your Building Code. This defect allows some houses in Idaho to be constructed with a major , but preventable, fire hazard. The Code that I am referring to is that which governs dryer exhaust ducts and air intake ventilation. This problem can best be illustrated by my personnel experience.

In March of this year, I purchased a new house in Weiser. In the process of installing our dryer, I discovered, to my alarm, that the exhaust duct for the dryer had been brought out through the footing at ground level and that the dryer hood was totally blocked by sod . I also found, that contrary to dryer installation instructions, the interior washer - dryer room had no means for providing the needed makeup air. If we had used the dryer without fixing these defects, the clothes would not have dried properly and there was an high probability that we would of had a dryer fire.

Prior to fixing same, I called these defects to the attention of our City Building inspector who advised me that he had no jurisdiction over this matter and that this installation had been approved by the State inspector. A subsequent visit by State personnel confirmed that the dryer ducts and ventilation did indeed meet State requirements. I was informed that to meet the State Code, the equivalent length of the 4 inch ducts only had to be 25 feet or less . I was also further informed that the code did not address the need for providing unimpeded air flow to and from the dryer so it is perfectly legal to install a dryer in an unventilated closet and to install a blocked or easily obstructed exhaust hood -- as was done at my house and several others in my subdivision.

Dryers depend, for their operation and safety, upon an adequate flow of air through their systems. This air transports the water vapor to the exterior atmosphere and limits the maximum temperature in the dryer. If the flow is reduced by an obstruction to the dryer intake or exhaust, or a plugged lint filter , the equipment will not operate properly. Also, under this condition, if the temperature control system is not functioning properly, simple calculations will show that the air can easily reach the self ignition flash point of the clothes and cause a fire. This can and has happened many times . According to the USFA News release of January 31, 2007 during the years 2002 to 2004 there was an average of 12,700 residential dryer fires per year resulting in 15 deaths and 300 injuries.

Admittedly, the State can do little to assure that the lint trap is properly cleaned or to assure that the dryer temperature control system is functional, but it can and should

assure that the dryer has an unimpeded flow of air to the dryer room and from the dryer exhaust hood to atmosphere. This can be done by making simple changes to the relevant code. Accordingly, I strongly suggest that the Board amend the code to require dryer vent hoods be located so that they can not be obstructed by snow, vegetation, debris or sod and to require the installation of adequate ventilation openings to interior washer/dryer rooms.
Admittedly, improving the safety of houses by implementing the above will increase costs. But, it is my hope, that if the Board elects to consider this matter, safety will prevail over cost.

Thank you for your consideration. If you have any questions, please so advise.

Very Truly Yours,

R J Tallent PE Retired

60 Lundberg Dr

Weiser, ID 83672

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